

**Community Hospital Emergency Departments Admissions for
Persons Diagnosed with a Mental Illness, Developmental Disability
or Substance Abuse Disorder**

**Fourth Quarter SFY 2009-2010
(April - June 2010)**

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December 21, 2010



Executive Summary

This report is in response to North Carolina General Statute 112C-147.1.1 Section 10.49(r) which requires the Department of Health and Human Services to report on community hospital emergency department admissions of individuals with mental health, developmental disabilities, and substance abuse diagnoses. This report covers admissions for the fourth quarter of State Fiscal Year 2009-2010 (April – June 2010).

Between April 1 and June 30, 2010, a total of 1,086,107 emergency department admissions were reported by 111 of the 112 community hospitals in the state. Of this number, 35,296 (3.2%) admissions had a primary diagnosis of a mental health, developmental disabilities, or substance abuse disorder. A total of 144,396 (13.3%) admissions had a primary or co-occurring diagnosis of a mental health, developmental disabilities, or substance abuse disorder.

- Of the admissions with a primary MH/DD/SA diagnosis, 70.4% (24,849) had a mental health diagnosis, 3.2% (1,120) had a developmental disabilities diagnosis, and 26.4% (9,327) had a substance abuse diagnosis.
- The number of persons admitted to emergency departments with a primary MH/DD/SA diagnosis were fairly evenly split between females (17,923) and males (17,373). However, gender differences in admissions were noted across the three disability groups. A higher percentage of females (80.8%) had a mental health primary diagnosis than males (59.7%). A higher percentage of males (36.3%) had a substance abuse primary diagnosis than females (16.9%). The percentage of females and males with a primary diagnosis of developmental disabilities was 2.3% and 4.1% respectively.
- Most emergency department admissions for individuals with a primary MH/DD/SA diagnosis involved individuals over the age of 18. Adults comprised 89.9 percent (31,746) of admissions, while children comprised 10.1 percent (3,550) of admissions. Differences related to the primary diagnosis were noted for these two age groups. A higher percentage of child admissions (18.5%) had a primary diagnosis of developmental disabilities than was the case for adults (1.5%), while a higher percentage of adult admissions (28.7%) had a primary diagnosis of substance abuse than children (6.0%). The percentage of admissions with a mental health related primary diagnosis was slightly higher for children (75.5%) than adults (69.8%).
- There was a wide variation in emergency department admission rates for individuals with a primary or co-occurring MH/DD/SA diagnosis across the state's Local Management Entities (LMEs). For mental health diagnoses, admission rates across LMEs ranged from 52.0 to 192.5 (average = 110.4) admissions per 10,000 population. For developmental disabilities diagnoses, admission rates across LMEs ranged from 2.5 to 14.4 (average = 8.9) admissions per 10,000 population, and for substance abuse diagnoses, admission rates across LMEs ranged from 14.2 to 54.6 (average = 34.4) admissions per 10,000 population.
- There was also considerable variation in emergency department admission rates across counties ranging from 46.4 to 371.0 (average = 153.6) admissions per 10,000 population for individuals with a primary or co-occurring MH/DD/SA diagnosis. For individuals with a primary diagnosis related to mental health, developmental disability or substance abuse the emergency department admission rates across counties ranged from 9.0 to 118.7 admissions per 10,000 population. The average for this group was 37.6 admissions per 10,000 population.

- Disposition data for admissions with a primary or co-occurring MH/DD/SA diagnosis indicate that the majority (59.7%) of emergency department admissions were discharged from the emergency department. The next largest category of admissions (30.9%) was individuals admitted to a hospital (ICU, Psych Unit, or general admission), 6.1% of individuals were transferred, and the remaining 3.3% had another disposition (e.g. left AMA or without advice, died, other, or unknown).

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Introduction

This report provides information on community hospital emergency department admissions diagnosed with a mental health, developmental disabilities, or substance abuse disorder in response to General Statute 112C-147.1.1 Section 10.49(r).

The data in this report includes the period April 1- June 30, 2010 (the 4th quarter of State Fiscal Year 2009-2010) reported by 111 of the 112 community hospitals across the state. These hospitals are listed in Appendix A.

Admissions and disposition data were recorded with the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT). General information on this tool can be found in Appendix B. ICD-9 codes were used to identify primary and co-occurring diagnoses for mental health, developmental disabilities, and substance abuse disorders. These codes are listed in Appendix C. The International Statistical Classification of Diseases and Related Health Problems (most commonly known by the abbreviation ICD) provides codes to classify diseases and a wide variety of signs, symptoms, abnormal findings, complaints, social circumstances and external causes of injury or disease.

NC-DETECT data from the hospitals was compiled into a centralized database, and selected parts of it were extracted, aggregated, and sent to the Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS) for this report, through a data sharing agreement with the Division of Public Health.

The aggregate data included the total number of admissions as well as the number of admissions diagnosed with a mental health, developmental disabilities, and/or substance abuse disorder. The latter included primary and co-occurring ICD-9 diagnostic codes, recorded at the time of admission, using the NHAMCS 2005 Emergency Department Data Summary classification system.

The aggregate data included the following basic demographic information on admissions: 1) whether the admission was a child (under age 18) or an adult (age 18 and over); 2) whether the admission was a female or a male; 3) county of residence; and 4) the Local Management Entity (LME) service area in which the admission occurred.

CAUTION: In order to comply with HIPAA privacy protection protocols, NC DETECT has redacted data from cells that contain counts of 10 or less. This primarily affects the LME and county level data displayed in this report. The values in tables that have had data redacted have been replaced with an asterisk (*).

Due to data redaction and missing data elements in some records in the NC DETECT data (e.g. unable to identify consumer's county or LME, disposition not provided), totals for LME and county level data tables will not equal totals in the statewide section of this report, and total dispositions will not equal total admissions.

To avoid confusion and to facilitate comparison with state averages, "Statewide" numbers below LME and county data tables in this report represent actual *statewide* summary data (as this data is most complete), not necessarily the total of the numbers in the table above.

Statewide MH/DD/SA Admissions

From April 1 to June 30, 2010, a total of 1,086,107 admissions were reported by emergency departments in North Carolina community hospitals. Of this number, 35,296 (3.2%) had a **primary diagnosis** of a mental health, developmental disabilities, or substance abuse disorder. A total of 144,396 (13.3%) admissions had a **primary or co-occurring diagnosis** of a mental health, developmental disabilities, or substance abuse disorder.

Figure 1 shows the distribution of admissions by diagnostic group for admissions with a primary diagnosis of mental health, developmental disabilities, or substance abuse. The data shows that 70.4 % (24,849) of admissions with a primary MH/DD/SA diagnosis had a mental health diagnosis, 3.2% (1,120) had a developmental disabilities diagnosis, and 26.4 % (9,327) had a substance abuse diagnosis.

**Figure 1: Admissions By Diagnostic Group
For Primary MH/DD/SA Admissions**

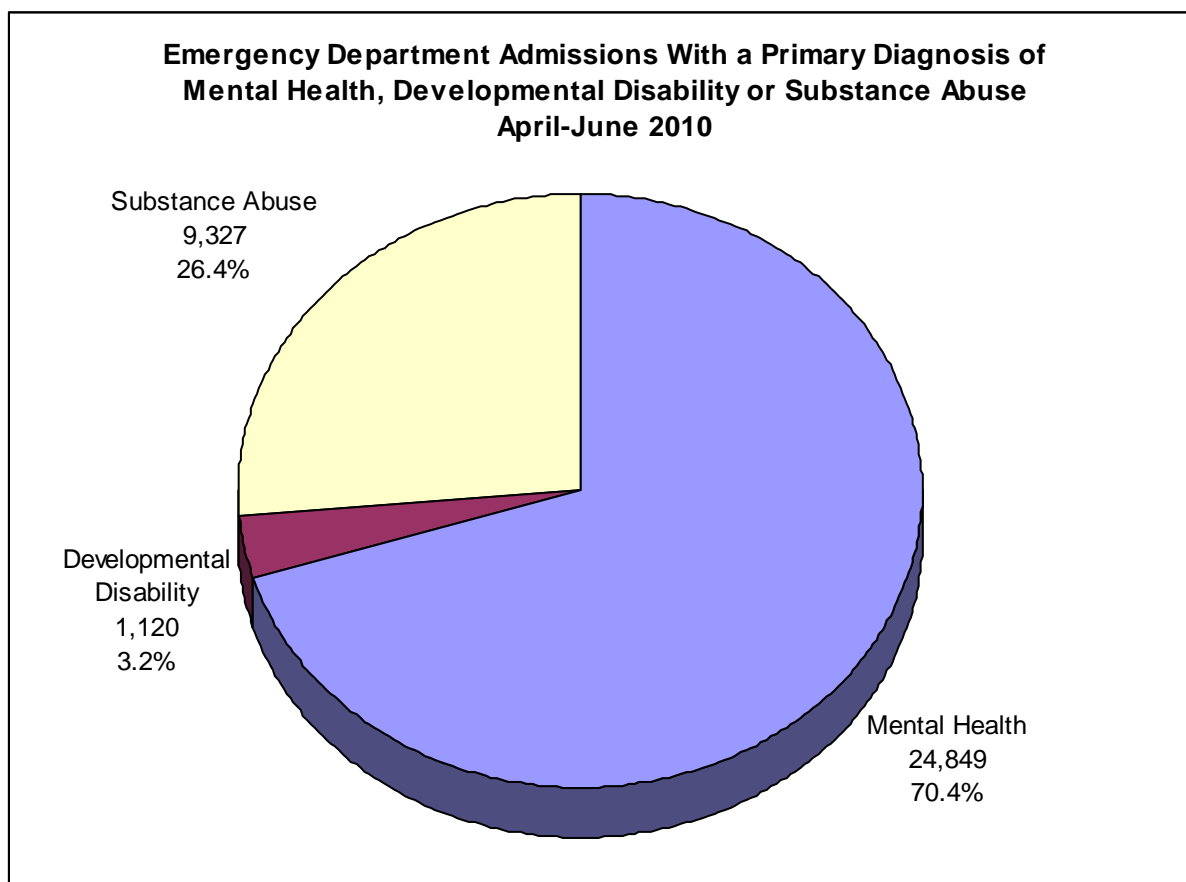


Figure 2 shows the distribution of admissions by gender and diagnostic group for admissions with a primary diagnosis of a mental health, developmental disabilities, or substance abuse disorder. Overall, those admissions were evenly divided among females (17,923) and males (17,373). However, there were gender differences in admissions across the three diagnostic groups. For example, a higher percentage of females (80.8%) had a mental health primary diagnosis than males (59.7%). Alternatively, a higher percentage of males (36.3%) had a substance abuse primary diagnosis than females (16.9%). The percentage of males (4.1%) with a primary diagnosis of developmental disabilities was almost twice the percentage of females (2.3%).

**Figure 2: Admissions By Gender And Diagnostic Group
For Primary MH/DD/SA Admissions**

**Emergency Department Admissions with Primary Diagnosis of Mental Health,
Developmental Disabilities, or Substance Abuse
April 1 - June 30, 2010**

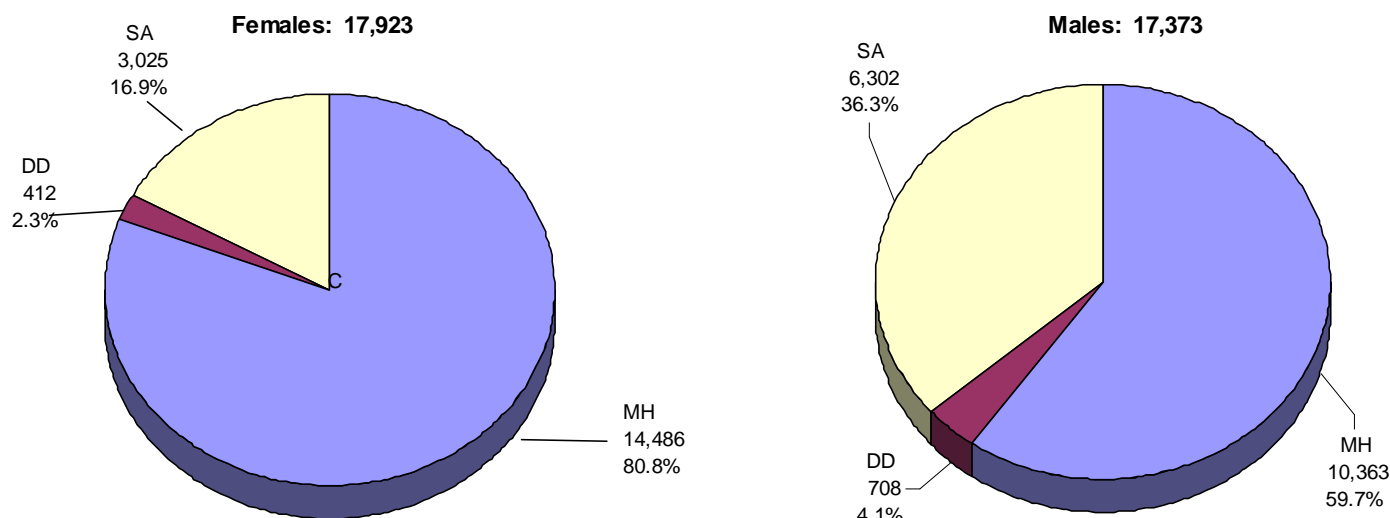
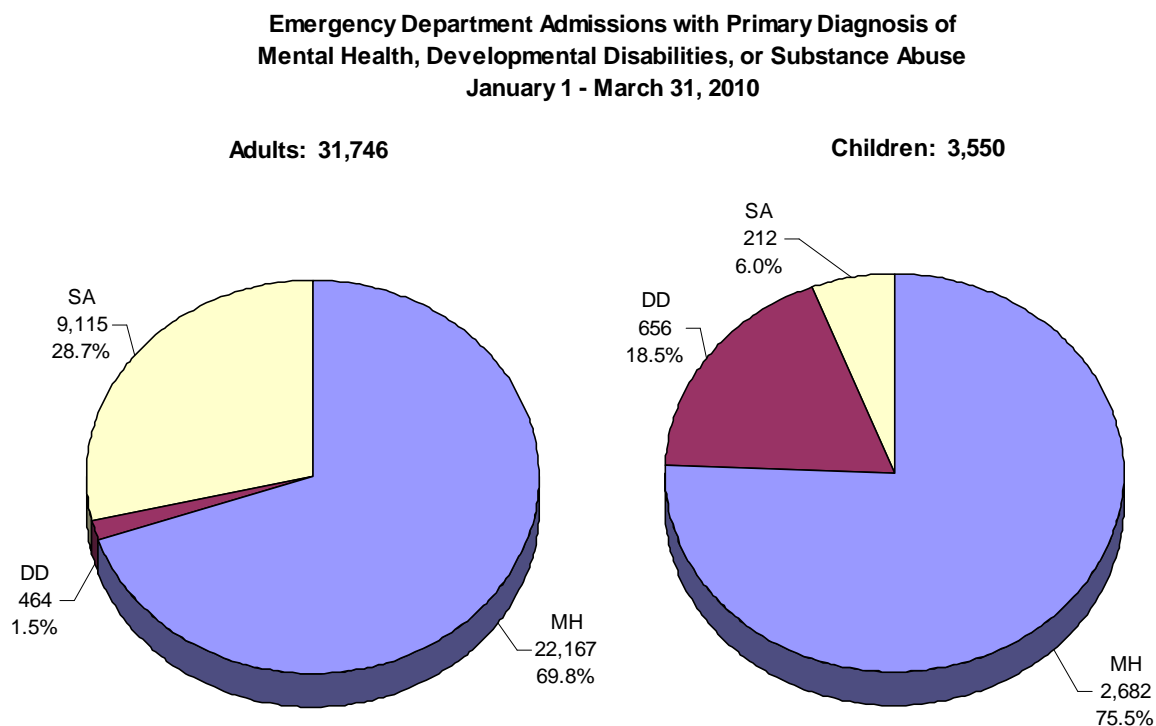


Figure 3 shows the distribution of admissions for children and adults by diagnostic group for admissions with a primary diagnosis of a mental health, developmental disabilities, or substance abuse disorder. Overall, 10.1% (3,550) were children and 89.9% (31,746) were adults. The data shows differences in the primary diagnosis for children and adults. A higher percentage of child admissions (18.5%) had a primary diagnosis of developmental disabilities than adults (1.5%) while a higher percentage of adult admissions (28.7%) had a primary diagnosis of substance abuse than children (6.0%). The percentage of admissions with a mental health related primary diagnosis was similar for children (75.5%) and adults (69.8%).

**Figure 3: Admissions By Age And Diagnostic Group
For Primary MH/DD/SA Admissions**



MH/DD/SA Admissions By LME

Tables 1 through 3 present data on emergency department admissions for each Local Management Entity's (LME) service area on (1) the number of admissions with a **primary diagnosis** of a mental health, developmental disabilities, or substance abuse disorder, (2) the number of admissions with **any diagnosis** (primary or co-occurring diagnosis) of a mental health, developmental disabilities, or substance abuse disorder for any of the up to 11 diagnoses reported to NC DETECT, and (3) the number of admissions for **all causes**. The data in these three tables are sorted alphabetically by LME name.

Tables 1 and 2 show for each LME the number of admissions that occurred during the quarter by diagnostic group (mental health, developmental disabilities, or substance abuse) and age group (child and adult). Please note that due to the low number of admissions for some age and diagnostic groups, the data in some cells in the first two tables has been redacted for privacy protection purposes.

Table 3 compares the total number of admissions for all causes with the total number and percentage of admissions with a primary diagnosis, and the total number and percentage of admissions with any diagnosis (primary or co-occurring) of a mental health, developmental disabilities, and substance abuse disorder.

In Table 3, the percent of total admissions (for all causes) involving a **primary diagnosis** of MH/DD/SA ranged from a low of 1.4% to a high of 6.4%. The average percent was 3.2%. The percent of total admissions (for all causes) involving **any diagnosis** of MH/DD/SA (primary or co-occurring) ranged from a low of 7.3% to a high of 20.5%. The average percent was 13.3%.

Tables 4 through 6 present data on **admission rates per 10,000 population** for each LME for emergency department admissions with **any diagnosis** (primary or co-occurring) of a mental health, developmental disabilities, or substance abuse disorder for any of the up to 11 diagnoses reported to NC DETECT.

These tables show population estimates for each LME at the beginning of the state fiscal year, the number of admissions that occurred during the quarter, and the admission rate (number of admissions per 10,000 population) for individuals with any diagnosis (primary or co-occurring) related to mental health, developmental disabilities, or substance abuse disorders.

The data in these three tables are sorted by admission rate (highest to lowest). There was considerable variation in admission rates across the LMEs. For **mental health** diagnoses, admission rates ranged from 52.0 to 192.5 admissions per 10,000 population. The average rate was 110.4 admissions per 10,000 population. For **developmental disabilities** diagnoses, admission rates ranged from 2.5 to 14.4 admissions per 10,000 population. The average rate was 8.9 admissions per 10,000 population. For **substance abuse** diagnoses, admission rates ranged from 14.2 to 54.6 admissions per 10,000 population. The average rate was 34.4 admissions per 10,000 population.

Table 1 displays data for each LME's service area on the number of adult and child admissions with a primary diagnosis of a mental health, developmental disabilities, or substance abuse disorder.

**Table 1: Adult And Child Admissions With A Primary Diagnosis Of
Mental Health, Developmental Disabilities or Substance Abuse
By Local Management Entity (LME)
April 1 – June 30, 2010**

LME	Mental Health			Developmental Disabilities			Substance Abuse			Grand Total
	Adult	Child	Total	Adult	Child	Total	Adult	Child	Total	
Alamance-Caswell ¹	434	51	485	*	12	12	180	*	180	677
Beacon Center	513	52	565	*	*	*	201	*	201	766
CenterPoint ¹	1,316	197	1,513	*	12	12	611	*	611	2,136
Crossroads	506	44	550	*	*	*	201	*	201	751
Cumberland	854	151	1,005	24	37	61	319	*	319	1,385
Durham	418	67	485	11	15	26	212	*	212	723
East Carolina ⁴	1,722	191	1,913	34	64	98	606	*	606	2,617
Eastpointe	505	40	545	*	*	*	122	*	122	667
Five County	460	46	506	*	*	*	128	*	128	634
Guilford	1,133	85	1,218	*	*	*	672	*	672	1,890
Johnston	272	44	316	*	*	*	103	*	103	419
Mecklenburg	1,271	142	1,413	16	*	16	827	15	842	2,271
Mental Health Partners	776	115	891	*	15	15	332	*	332	1,238
Onslow-Carteret	377	59	436	*	*	*	161	*	161	597
Orange-Person-Chatham	389	79	468	*	12	12	202	*	202	682
Pathways	1,254	191	1,445	11	37	48	526	*	526	2,019
Piedmont	1,720	235	1,955	31	52	83	600	14	614	2,652
Sandhills Center	1,767	232	1,999	43	86	129	625	*	625	2,753
Smoky Mountain	1,437	136	1,573	43	48	91	668	12	680	2,344
Southeastern Center	883	112	995	12	24	36	496	*	496	1,527
Southeastern Regional	756	90	846	*	14	14	319	*	319	1,179
Wake	672	66	738	*	17	17	264	*	264	1,019
Western Highlands	2,580	246	2,826	90	77	167	668	*	668	3,661
Statewide³	22,167	2,682	24,849	464	656	1,120	9,115	212	9,327	35,296

Notes

1. The data provided reflects the change effective July 2009 when Rockingham County moved from Alamance-Caswell-Rockingham to CenterPoint.
2. An asterisk (*) indicates the number was 10 or less. The actual number was redacted from the data that was provided for privacy protection reasons.
3. Refer to the CAUTION in the introduction (on page 5).
4. Data for Albemarle LME is included with East Carolina Behavioral Healthcare LME.

Table 2 displays data for each LME's service area on the number of adult and child admissions with a primary or co-occurring diagnosis of a mental health, developmental disabilities, or substance abuse disorder for any of the up to 11 diagnoses reported to NC DETECT.

**Table 2: Adult And Child Admissions With A Primary Or Co-Occurring Diagnosis Of
Mental Health, Developmental Disabilities Or Substance Abuse
By Local Management Entity (LME)
April 1 – June 30, 2010**

LME	Mental Health			Developmental Disabilities			Substance Abuse		
	Adult	Child	Total	Adult	Child	Total	Adult	Child	Total
Alamance-Caswell ¹	2,025	141	2,166	94	100	194	807	*	807
Beacon Center	1,724	148	1,872	68	97	165	669	11	680
CenterPoint ¹	6,122	462	6,584	284	296	580	1,899	34	1,933
Crossroads	3,230	146	3,376	109	91	200	805	11	816
Cumberland	3,545	373	3,918	195	215	410	1,498	27	1,525
Durham Center	1,419	127	1,546	94	103	197	624	*	624
East Carolina ⁴	7,065	470	7,535	374	244	618	2,256	56	2,312
Eastpointe	3,596	286	3,882	153	171	324	1,245	29	1,274
Five County	1,778	114	1,892	60	43	103	689	*	689
Guilford Center	2,340	140	2,480	72	47	119	1,297	12	1,309
Johnston	1,449	122	1,571	77	60	137	533	19	552
Mecklenburg	6,304	295	6,599	368	192	560	2,656	46	2,702
Mental Health Partners	4,450	312	4,762	124	160	284	1,052	39	1,091
Onslow-Carteret	3,204	252	3,456	190	159	349	1,090	11	1,101
O-P-C	1,780	181	1,961	110	112	222	690	*	690
Pathways	6,533	530	7,063	244	288	532	1,572	22	1,594
Piedmont	7,382	633	8,015	340	382	722	2,131	50	2,181
Sandhills Center	6,273	415	6,688	244	251	495	2,202	41	2,243
Smoky Mountain Center	5,715	333	6,048	215	188	403	1,711	38	1,749
Southeastern Center	3,638	240	3,878	155	138	293	1,437	12	1,449
Southeastern Regional	3,781	225	4,006	115	122	237	1,383	16	1,399
Wake	4,643	208	4,851	384	170	554	1,250	26	1,276
Western Highlands	8,225	433	8,658	388	208	596	1,917	41	1,958
Statewide³	97,123	6,601	103,724	4,488	3,838	8,326	31,701	645	32,346

Notes

1. The data provided reflects the change effective July 2009 when Rockingham County moved from Alamance-Caswell-Rockingham to CenterPoint.
2. An asterisk (*) indicates the number was 10 or less. The actual number was redacted from the data that was provided for privacy protection reasons.
3. Refer to the CAUTION in the introduction (on page 5).
4. Data for Albemarle LME is included with East Carolina Behavioral Healthcare LME.

Table 3 displays summary data for each LME's service area on the number of admissions for all causes, the number of admissions with a primary diagnosis of a mental health, developmental disabilities, or substance abuse disorder, and the number of admissions with any diagnosis (primary or co-occurring) of a mental health, developmental disabilities, or substance abuse disorder for any of the up to 11 diagnoses reported to NC DETECT.

**Table 3: Emergency Department Admissions By Diagnostic Group
By Local Management Entity (LME)
April 1 – June 30, 2010**

LME	All Causes	Primary Diagnosis of MH/DD/SA		Any Diagnosis of MH/DD/SA	
Alamance-Caswell ¹	18,920	677	3.6%	3,167	16.7%
Beacon Center	36,505	766	2.1%	2717	7.4%
CenterPoint ¹	64,251	2,136	3.3%	9,097	14.2%
Crossroads	35,340	751	2.1%	4392	12.4%
Cumberland	33,144	1,385	4.2%	5,853	17.7%
Durham Center	28,505	723	2.5%	2367	8.3%
East Carolina ³	79,084	2,617	3.3%	10,465	13.2%
Eastpointe	40,512	667	1.6%	5480	13.5%
Five County	33,430	634	1.9%	2,684	8.0%
Guilford Center	53,459	1,890	3.5%	3908	7.3%
Johnston	19,406	419	2.2%	2,260	11.6%
Mecklenburg	91,251	2,271	2.5%	9861	10.8%
Mental Health Partners	32,076	1,238	3.9%	6,137	19.1%
Onslow-Carteret	23,976	597	2.5%	4906	20.5%
O-P-C	18,348	682	3.7%	2,873	15.7%
Pathways	58,729	2,019	3.4%	9189	15.6%
Piedmont	82,302	2,652	3.2%	10,918	13.3%
Sandhills Center	70,569	2,753	3.9%	9426	13.4%
Smoky Mountain Center	64,672	2,344	3.6%	8,200	12.7%
Southeastern Center	37,417	1,527	4.1%	5620	15.0%
Southeastern Regional	45,753	1,179	2.6%	5,642	12.3%
Wake	73,140	1,019	1.4%	6681	9.1%
Western Highlands	57,050	3,661	6.4%	11,212	19.7%
Statewide²	1,086,107	35,296	3.2%	144,396	13.3%

Notes

1. The data provided reflects the change effective July 2009 when Rockingham County moved from Alamance-Caswell-Rockingham to CenterPoint.
2. Refer to the CAUTION in the introduction (on page 5).
3. Data for Albemarle LME is included in East Carolina Behavioral Healthcare LME.

Table 4 displays data for each LME's service area on admission rates per 10,000 population (sorted highest to lowest) for individuals with a primary or co-occurring mental health diagnosis for any of the up to 11 diagnoses reported to NC DETECT.

**Table 4: Admission Rates For Individuals With Any (Primary Or Co-Occurring)
Mental Health Diagnosis, By Local Management Entity
April 1 – June 30, 2010**

LME	Population²	Admissions	Rate Per 10,000 Population
Mental Health Partners	247,410	4,762	192.5
Pathways	384,960	7,063	183.5
Western Highlands	507,121	8,658	170.7
Southeastern Regional	256,296	4,006	156.3
Onslow-Carteret	242,062	3,456	142.8
Eastpointe	294,211	3,882	131.9
East Carolina ⁴	586,815	7,535	128.4
Alamance-Caswell ¹	172,695	2,166	125.4
Crossroads	270,755	3,376	124.7
CenterPoint ¹	530,192	6,584	124.2
Cumberland	319,883	3,918	122.5
Sandhills Center	547,102	6,688	122.2
Smoky Mountain	522,576	6,048	115.7
Southeastern Center	355,050	3,878	109.2
Piedmont	739,735	8,015	108.3
Johnston	168,825	1,571	93.1
O-P-C	231,244	1,961	84.8
Five County	234,180	1,892	80.8
Beacon Center	248,084	1,872	75.5
Mecklenburg	894,219	6,599	73.8
Durham	267,492	1,546	57.8
Wake	900,342	4,851	53.9
Guilford	476,831	2,480	52.0
Statewide³	9,398,080	103,724	110.4

Notes

1. The data provided reflects the change effective July 2009 when Rockingham County moved from Alamance-Caswell-Rockingham to CenterPoint.
2. Source: July 2009 Projected Population, NC Office of State Budget and Management (OSBM), State Demographics Branch website: http://www.osbm.state.nc.us/demog/countytotals_singleage_2009.html. Last Update: April 24, 2009. Downloaded 7/31/09.
3. Refer to the CAUTION in the introduction (on page 5).
4. Data for Albemarle LME is included with East Carolina Behavioral Healthcare LME.

Table 5 displays data for each LME's service area on admission rates per 10,000 population (sorted highest to lowest) for individuals with a primary or co-occurring developmental disabilities diagnosis for any of the up to 11 diagnoses reported to NC DETECT.

**Table 5: Admission Rates For Individuals With Any (Primary Or Co-Occurring) Developmental Disabilities Diagnosis, By Local Management Entity
April 1- June 30, 2010**

LME	Population²	Admissions	Rate Per 10,000 Population
Onslow-Carteret	242,062	349	14.4
Pathways	384,960	532	13.8
Cumberland	319,883	410	12.8
Western Highlands	507,121	596	11.8
Mental Health Partners	247,410	284	11.5
Alamance-Caswell ¹	172,695	194	11.2
Eastpointe	294,211	324	11.0
CenterPoint ¹	530,192	580	10.9
East Carolina ⁴	586,815	618	10.5
Piedmont	739,735	722	9.8
O-P-C	231,244	222	9.6
Southeastern Regional	256,296	237	9.2
Sandhills Center	547,102	495	9.0
Southeastern Center	355,050	293	8.3
Johnston	168,825	137	8.1
Smoky Mountain	522,576	403	7.7
Crossroads	270,755	200	7.4
Durham	267,492	197	7.4
Beacon Center	248,084	165	6.7
Mecklenburg	894,219	560	6.3
Wake	900,342	554	6.2
Five County	234,180	103	4.4
Guilford	476,831	119	2.5
Statewide³	9,398,080	8,326	8.9

Notes

1. The data provided reflects the change effective July 2009 when Rockingham County moved from Alamance-Caswell-Rockingham to CenterPoint.
2. Source: July 2009 Projected Population, NC Office of State Budget and Management (OSBM), State Demographics Branch website: http://www.osbm.state.nc.us/demog/countytotals_singleage_2009.html. Last Update: April 24, 2009. Downloaded 7/31/09.
3. Refer to the CAUTION in the introduction (on page 5).
4. Data for Albemarle LME is included with East Carolina Behavioral Healthcare LME.

Table 6 displays data for each LME's service area on admission rates per 10,000 population (sorted highest to lowest) for individuals with a primary or co-occurring substance abuse diagnosis for any of the up to 11 diagnoses reported to NC DETECT.

**Table 6: Admission Rates For Individuals With Any (Primary or Co-Occurring) Substance Abuse Diagnosis, By Local Management Entity
January 1 - March 31, 2010**

LME	Population²	Admissions	Rate Per 10,000 Population
Southeastern Regional	256,296	1,399	54.6
Cumberland	319,883	1,525	47.7
Alamance-Caswell ¹	172,695	807	46.7
Onslow-Carteret	242,062	1,101	45.5
Mental Health Partners	247,410	1,091	44.1
Eastpointe	294,211	1,274	43.3
Pathways	384,960	1,594	41.4
Sandhills Center	547,102	2,243	41.0
Southeastern Center	355,050	1,449	40.8
East Carolina ⁴	586,815	2,312	39.4
Western Highlands	507,121	1,958	38.6
CenterPoint ¹	530,192	1,933	36.5
Smoky Mountain	522,576	1,749	33.5
Johnston	168,825	552	32.7
Mecklenburg	894,219	2,702	30.2
Crossroads	270,755	816	30.1
Orange-Person-Chatham	231,244	690	29.8
Piedmont	739,735	2,181	29.5
Five County	234,180	689	29.4
Guilford	476,831	1,309	27.5
Beacon Center	248,084	680	27.4
Durham	267,492	624	23.3
Wake	900,342	1,276	14.2
Statewide³	9,398,080	32,346	34.4

Notes

1. The data provided reflects the change effective July 2009 when Rockingham County moved from Alamance-Caswell-Rockingham to CenterPoint.
2. Source: July 2009 Projected Population, NC Office of State Budget and Management (OSBM), State Demographics Branch website: http://www.osbm.state.nc.us/demog/countytotals_singleage_2009.html. Last Update: April 24, 2009. Downloaded 7/31/09.
3. Refer to the CAUTION in the introduction (on page 5).
4. Data for Albemarle LME is included with East Carolina Behavioral Healthcare LME.

MH/DD/SA Admissions by County

Table 7 presents data on emergency department admissions and admission rates by county for individuals with a diagnosis of a mental health, developmental disabilities, or substance abuse disorder. The data in this table is sorted alphabetically by county.

This table shows for each county population estimates at the beginning of the state fiscal year, the number of admissions that occurred during the quarter, and the admission rate per 10,000 population for individuals with a primary diagnosis of a mental health, developmental disabilities, or substance abuse disorder and for individuals with any diagnosis (primary or co-occurring) related to a mental health, developmental disabilities, or substance abuse disorder.

There was considerable variation in admission rates across counties for both groups.

County admission rates for individuals with a **primary diagnosis** related to mental health, developmental disabilities, or substance abuse ranged from 9.0 to 118.7 admissions per 10,000 population. The average for this group was 37.6 admissions per 10,000 population.

County admission rates for individuals with **any diagnosis** (primary or co-occurring) related to mental health, developmental disabilities, or substance abuse ranged from 46.4 to 371.0 admissions per 10,000 population. The average for this group was 153.6 admissions per 10,000 population.

**Table 7: Admission Rates By County
For Admissions With A MH/DD/SA Diagnosis
April 1 – June 30, 2010**

County	Population ¹	Admissions With Primary MH/DD/SA Diagnosis		Admissions With Any MH/DD/SA Diagnosis	
		Number of Admissions	Admissions Per 10,000 Population	Number of Admissions	Admissions Per 10,000 Population
Alamance	149,401	630	42.2	2,578	172.6
Alexander	37,306	138	37.0	593	159.0
Alleghany	11,157	66	59.2	137	122.8
Anson	25,324	153	60.4	608	240.1
Ashe	26,488	115	43.4	260	98.2
Avery	18,301	54	29.5	158	86.3
Beaufort	46,654	155	33.2	707	151.5
Bertie	20,111	88	43.8	287	142.7
Bladen	32,213	166	51.5	490	152.1
Brunswick	106,586	352	33.0	1,591	149.3
Buncombe	231,016	2,028	87.8	5,353	231.7
Burke	90,337	468	51.8	2,083	230.6
Cabarrus	177,007	635	35.9	2,950	166.7

*NC Division of Mental Health, Developmental Disabilities, and Substance Abuse Services
Community Hospital Emergency Department Admissions, Fourth Quarter, SFY 2009-2010*

County	Population ¹	Admissions With Primary MH/DD/SA Diagnosis		Admissions With Any MH/DD/SA Diagnosis	
		Number of Admissions	Admissions Per 10,000 Population	Number of Admissions	Admissions Per 10,000 Population
Caldwell	80,744	379	46.9	1,757	217.6
Camden	9,799	43	43.9	73	74.5
Carteret	63,858	232	36.3	1,892	296.3
Caswell	23,294	56	24.0	181	77.7
Catawba	157,073	781	49.7	3,367	214.4
Chatham	62,471	155	24.8	425	68.0
Cherokee	27,225	104	38.2	350	128.6
Chowan	14,722	71	48.2	279	189.5
Clay	10,576	19	18.0	78	73.8
Cleveland	98,892	665	67.2	3,177	321.3
Columbus	55,076	176	32.0	843	153.1
Craven	98,488	515	52.3	2,453	249.1
Cumberland	319,883	1,374	43.0	5,025	157.1
Currituck	23,334	67	28.7	161	69.0
Dare	33,442	146	43.7	555	166.0
Davidson	160,963	499	31.0	2,406	149.5
Davie	41,685	130	31.2	482	115.6
Duplin	54,005	147	27.2	638	118.1
Durham	267,492	727	27.2	2,080	77.8
Edgecombe	51,599	183	35.5	633	122.7
Forsyth	349,569	1,476	42.2	5,590	159.9
Franklin	58,999	108	18.3	612	103.7
Gaston	209,516	1,073	51.2	3,493	166.7
Gates	11,706	34	29.0	80	68.3
Graham	8,133	16	19.7	93	114.3
Granville	56,620	138	24.4	478	84.4
Greene	21,360	46	21.5	261	122.2
Guilford	476,831	1,920	40.3	3,516	73.7
Halifax	55,135	346	62.8	902	163.6
Harnett	113,001	375	33.2	1,565	138.5
Haywood	57,430	357	62.2	1,174	204.4
Henderson	105,630	454	43.0	1,280	121.2
Hertford	23,679	73	30.8	208	87.8
Hoke	45,602	156	34.2	584	128.1
Hyde	5,485	12	21.9	54	98.5
Iredell	158,396	386	24.4	1,938	122.4

*NC Division of Mental Health, Developmental Disabilities, and Substance Abuse Services
Community Hospital Emergency Department Admissions, Fourth Quarter, SFY 2009-2010*

County	Population ¹	Admissions With Primary MH/DD/SA Diagnosis		Admissions With Any MH/DD/SA Diagnosis	
		Number of Admissions	Admissions Per 10,000 Population	Number of Admissions	Admissions Per 10,000 Population
Jackson	37,551	126	33.6	424	112.9
Johnston	168,825	434	25.7	1,959	116.0
Jones	10,305	47	45.6	225	218.3
Lee	58,709	513	87.4	857	146.0
Lenoir	57,431	122	21.2	991	172.6
Lincoln	76,552	263	34.4	1,581	206.5
Macon	34,847	119	34.1	345	99.0
Madison	21,053	250	118.7	781	371.0
Martin	23,783	63	26.5	579	243.5
McDowell	45,149	303	67.1	932	206.4
Mecklenburg	894,219	2,299	25.7	8,925	99.8
Mitchell	16,044	82	51.1	219	136.5
Montgomery	27,777	188	67.7	466	167.8
Moore	86,905	428	49.2	1,786	205.5
Nash	95,163	215	22.6	442	46.4
New Hanover	194,914	985	50.5	2,805	143.9
Northampton	21,093	103	48.8	337	159.8
Onslow	178,204	373	20.9	2,363	132.6
Orange	131,155	409	31.2	1,321	100.7
Pamlico	12,884	42	32.6	204	158.3
Pasquotank	41,381	351	84.8	619	149.6
Pender	53,550	178	33.2	525	98.0
Perquimans	13,193	55	41.7	166	125.8
Person	37,618	119	31.6	697	185.3
Pitt	159,354	694	43.6	2,241	140.6
Polk	19,009	40	21.0	126	66.3
Randolph	142,871	504	35.3	1,636	114.5
Richmond	46,913	374	79.7	974	207.6
Robeson	131,610	763	58.0	3,128	237.7
Rockingham	91,926	370	40.2	1,195	130.0
Rowan	140,891	747	53.0	1,791	127.1
Rutherford	64,257	492	76.6	1,593	247.9
Sampson	66,461	146	22.0	947	142.5
Scotland	37,397	82	21.9	586	156.7
Stanly	60,268	333	55.3	701	116.3
Stokes	47,012	181	38.5	708	150.6

*NC Division of Mental Health, Developmental Disabilities, and Substance Abuse Services
Community Hospital Emergency Department Admissions, Fourth Quarter, SFY 2009-2010*

County	Population ¹	Admissions With Primary MH/DD/SA Diagnosis		Admissions With Any MH/DD/SA Diagnosis	
		Number of Admissions	Admissions Per 10,000 Population	Number of Admissions	Admissions Per 10,000 Population
Surry	73,807	245	33.2	1,654	224.1
Swain	14,146	49	34.6	184	130.1
Transylvania	31,358	144	45.9	383	122.1
Tyrrell	4,290	*	*	24	55.9
Union	200,606	410	20.4	1,916	95.5
Vance	43,529	41	9.4	298	68.5
Wake	900,342	1,039	11.5	6,006	66.7
Warren	19,897	18	9.0	129	64.8
Washington	13,112	15	11.4	74	56.4
Watauga	45,901	94	20.5	314	68.4
Wayne	116,314	261	22.4	2,325	199.9
Wilkes	67,622	374	55.3	658	97.3
Wilson	79,962	348	43.5	1,147	143.4
Yadkin	38,552	132	34.2	416	107.9
Yancey	18,754	92	49.1	283	150.9
Statewide³	9,398,080	35,296	37.6	144,396	153.6

Notes

1. Source: July 2009 Projected Population, NC Office of State Budget and Management (OSBM), State Demographics Branch website: http://www.osbm.state.nc.us/demog/countytotals_singleage_2009.html. Last Update: April 24, 2009. Downloaded 7/31/09.
2. An asterisk (*) indicates the number was 10 or less. The actual number was redacted from the data that was provided for privacy protection reasons.
3. Refer to the CAUTION in the introduction (on page 5).

Disposition of MH/DD/SA Admissions

Table 8 presents statewide data on the disposition of emergency department admissions that had a primary or co-occurring diagnosis of a mental health, developmental disabilities, or substance abuse disorder. The largest category of disposition (59.7%) was individuals who were treated and discharged from the emergency department, the second largest grouping (30.9%) consisted of individuals who were admitted to a hospital (ICU, Psych Unit, or general admission), 6.1% were transferred (to prison, jail, general hospital, another type of institution, or to home care), and the remaining 3.3% had one of the other dispositions shown in the table below.

**Table 8: Disposition Of Admissions With
Any (Primary Or Co-Occurring) Diagnosis Of MH/DD/SA
April 1 – June 30, 2010**

Disposition	Mental Health		Developmental Disabilities		Substance Abuse		Total MH/DD/SA	
	Number	%	Number	%	Number	%	Number	%
Admitted to ICU	497	0.5%	65	0.8%	274	0.9%	836	0.6%
Admitted to Psych Unit	2,449	2.4%	90	1.1%	1,090	3.5%	3,629	2.6%
Admitted ¹	27,272	27.2%	1,895	23.6%	9,374	30.1%	38,541	27.7%
Observation	974	1.0%	50	0.6%	307	1.0%	1,331	1.0%
Transferred ²	6,265	6.3%	314	3.9%	1,846	5.9%	8,425	6.1%
Discharged	60,429	60.4%	5,526	68.9%	17,115	55.0%	83,070	59.7%
Died	163	0.2%	*	*	31	0.1%	194	0.1%
Left AMA	1,176	1.2%	30	0.4%	615	2.0%	1,821	1.3%
Left Without Advice	514	0.5%	27	0.3%	240	0.8%	781	0.6%
Other ³	196	0.2%	14	0.2%	154	0.5%	364	0.3%
Unknown	171	0.2%	11	0.1%	63	0.2%	245	0.2%

Notes

1. "Admitted" is a general code that covers any person admitted as an inpatient to any unit of the hospital. It is intended to be used to report admissions to units other than Psych or ICU, which have their own codes; however, it is possible that some emergency departments may be using this code to report all admissions.
2. Includes transfer to prison, jail, general hospital, another type of institution, or to home care.
3. Other category is not clearly defined.
4. An asterisk (*) indicates the number was 10 or less. The actual number was redacted from the data that was provided for privacy protection reasons.

Appendix A: Community Hospitals Reporting Data		
County	Town	Hospital
Alamance	Burlington	Alamance
Alexander	Taylorsville	Frye Alexander
Alleghany	Sparta	Alleghany
Anson	Wadesboro	Anson
Ashe	Jefferson	Ashe
Avery	Linville	Charles A. Cannon
Beaufort	Washington	Beaufort
Beaufort	Belhaven	Pungo
Bertie	Windsor	Bertie
Bladen	Elizabethtown	Bladen
Brunswick	Supply	Brunswick
Brunswick	Southport	Dosher
Buncombe	Asheville	Mission
Burke	Morganton	Grace
Burke	Valdese	Valdese
Cabarrus	Concord	Northeast
Caldwell	Lenoir	Caldwell
Carteret	Morehead City	Carteret
Catawba	Hickory	Catawba Valley
Catawba	Hickory	Frye
Chatham	Siler City	Chatham
Cherokee	Murphy	Murphy
Chowan	Edenton	Chowan
Cleveland	Shelby	Cleveland
Cleveland	Kings Mountain	Kings Mountain
Columbus	Whiteville	Columbus
Craven	New Bern	Craven
Cumberland	Fayetteville	Cape Fear Valley
Dare	Nags Head	Outer Banks
Davidson	Lexington	Lexington
Davidson	Thomasville	Thomasville
Davie	Mocksville	Davie

Appendix A: Community Hospitals Reporting Data		
County	Town	Hospital
Duplin	Kenansville	Duplin
Durham	Durham	Duke
Durham	Durham	Durham Regional
Edgecombe	Tarboro	Heritage
Forsyth	Winston-Salem	Forsyth
Forsyth	Winston-Salem	NCBH
Franklin	Louisburg	Franklin
Gaston	Gastonia	Gaston
Granville	Oxford	Granville
Guilford	High Point	High Point
Guilford	Greensboro	Moses Cone
Guilford	Greensboro	Wesley Long
Halifax	Roanoke Rapids	Halifax
Halifax	Scotland Neck	Our Community
Harnett	Dunn	Betsy Johnson
Haywood	Clyde	Haywood
Henderson	Hendersonville	Margaret Pardee
Henderson	Fletcher	Park Ridge
Hertford	Ahoskie	Roanoke Chowan
Iredell	Statesville	Davis
Iredell	Statesville	Iredell
Iredell	Mooresville	Lake Norman
Jackson	Sylva	Harris
Johnston	Smithfield	Johnston
Lee	Sanford	Central Carolina
Lenoir	Kinston	Lenoir
Lincoln	Lincolnton	Lincoln
Macon	Franklin	Angel
Macon	Highlands	Highlands
Martin	Williamston	Martin
McDowell	Marion	McDowell
Mecklenburg	Charlotte	CMC

Appendix A: Community Hospitals Reporting Data		
County	Town	Hospital
Mecklenburg	Charlotte	CMC Mercy
Mecklenburg	Charlotte	CMC Pineville
Mecklenburg	Charlotte	CMC University
Mecklenburg	Charlotte	Presbyterian
Mecklenburg	Huntersville	Presbyterian Huntersville
Mecklenburg	Matthews	Presbyterian Matthews
Mitchell	Spruce Pine	Blue Ridge Regional
Montgomery	Troy	FHS Montgomery
Moore	Pinehurst	FHS Moore
Nash	Rocky Mount	Nash
New Hanover	Wilmington	New Hanover
Onslow	Jacksonville	Onslow
Orange	Chapel Hill	UNC Hospitals
Pasquotank	Elizabeth City	Albemarle
Pender	Burgaw	Pender
Person	Roxboro	Person
Pitt	Greenville	Pitt
Polk	Columbus	St Luke
Randolph	Asheboro	Randolph
Richmond	Rockingham	FHS Richmond
Richmond	Hamlet	Sandhills
Robeson	Lumberton	Southeastern
Rockingham	Reidsville	Annie Penn
Rockingham	Eden	Morehead
Rowan	Salisbury	Rowan
Rutherford	Rutherfordton	Rutherford
Sampson	Clinton	Sampson
Scotland	Laurinburg	Scotland
Stanly	Albemarle	Stanly
Stokes	Danbury	Stokes Reynolds
Surry	Elkin	Hugh Chatham
Surry	Mt. Airy	Northern Surry

Appendix A: Community Hospitals Reporting Data

County	Town	Hospital
Swain	Bryson City	Swain
Transylvania	Brevard	Transylvania
Union	Monroe	Union
Vance	Henderson	Maria Parham
Wake	Raleigh	Duke Raleigh
Wake	Raleigh	Rex
Wake	Apex	WakeMed Apex
Wake	Cary	WakeMed Cary
Wake	Raleigh	WakeMed North
Wake	Raleigh	WakeMed Raleigh
Washington	Plymouth	Washington
Watauga	Blowing Rock	Blowing Rock
Watauga	Boone	Watauga
Wayne	Goldsboro	Wayne
Wilkes	North Wilkesboro	Wilkes
Wilson	Wilson	Wilson
Yadkin	Yadkinville	Hoots

Appendix B: Data Source

What is NC-DETECT?

The North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT) is the Web-based early event detection and timely public health surveillance system in the North Carolina Public Health Information Network. NC DETECT uses the CDC's CUSUM algorithms from the Early Aberration Reporting System (EARS) to monitor several data sources for suspicious patterns. The reporting system also provides broader public health surveillance reports for emergency department visits related to hurricanes, injuries, asthma, vaccine-preventable diseases, occupational health and others.

Who develops and manages NC-DETECT?

Staff at the UNC Department of Emergency Medicine (UNC DEM), under contract to the North Carolina Division of Public Health (NC DPH) develop and manage NC DETECT. UNC DEM collaborates with NC DPH on all aspects of NC DETECT development.

How is NC DETECT related to NCHESS?

Data from the North Carolina Hospital Emergency Surveillance System (NCHESS) are loaded into NC DETECT (which was formerly known as the North Carolina Bioterrorism and Emerging Infection Prevention System, NC BEIPS). The NC DETECT team at the UNC Department of Emergency Medicine monitors the quality of the NCHESS data and work with hospitals, their vendors and the North Carolina Hospital Association (NCHA) to ensure NC DETECT users have access to the most accurate data possible.

How have North Carolinians benefited from NC DETECT?

With NC DETECT, public health officials at the local, regional and state levels are able to monitor a variety of important public health issues in a secure and timely fashion, including influenza, post-hurricane health issues, injury and violence, and vaccine-preventable disease surveillance. For example, NC DETECT users have monitored illness and injury effects after hurricanes Isabel and Ophelia, analyzed ED use at select hospitals by Katrina evacuees, and uncovered unreported cases of tuberculosis. Before NC DETECT, similar surveillance was either simply not performed, relied on manual, redundant data entry, or had a considerable time lag. A summary of specific NC DETECT outcomes is also available. Since NC DETECT is designed to uncover suspicious patterns of illness in both human and animal populations, it is a key tool in the early detection of emerging infectious diseases, such as new strains of influenza.

Who pays for NC DETECT?

NC DETECT is funded from federal bioterrorism grants administered through the Centers for Disease Control and Prevention and disbursed by the North Carolina Department of Health and Human Services, Division of Public Health.

For more Information: ncdetect@listserv.med.unc.edu, (919) 843-2361

Appendix C: ICD-9 codes

ICD-9 codes that are used to categorize each of the three disabilities are listed below. The International Statistical Classification of Diseases and Related Health Problems (most commonly known by the abbreviation ICD) provides codes to classify diseases and a wide variety of signs, symptoms, abnormal findings, complaints, social circumstances and external causes of injury or disease.

ICD-9 Code Grouping	Description of Category
Mental Health	
290.00- 290.99	Dementia/Delusional psychosis
293.00-293.99	Organic delirium/delusions
294.00-294.99	Dementia/Organic brain syndrome
295.00-295.99	Schizophrenia
296.00-296.99	Major depression/bipolar disorder
297.00-297.99	Paranoia/delusional disorders
298.00-298.99	Unspecified psychosis
299.00-299.99	Childhood psychosis
300.00-300.99	Anxiety disorders
301.00-301.99	Personality disorders
302.00-302.99	Psychosexual disorders
306.00-306.99	Physiological malfunction from mental disorders
307.00-307.99	Sleeping disorders/eating disorders
308.00-308.99	Acute reactions to stress
309.00-309.99	Adjustment disorders
310.00-310.99	Specific non-psychotic mental disorders
311.0-311.99	Depressive disorders, not otherwise specified
312.00-312.99	Conduct disorders
313.00-314.99	Emotional disturbance of childhood or adolescence
799.9	Other MH /unknown/unspecified
995.50-995.89	Child/adult abuse/neglect

ICD-9 Code Grouping	Description of Category
Substance Use and Abuse	
292.00-292.99	Drug induced psychosis
304.00-304.99	Drug dependence
305.20-305.99	Drug abuse
291.00-291.99	Alcohol-related psychosis
303.00-303.99	Alcohol dependence
305.00-305.03	Alcohol abuse
Developmental Disabilities	
315.00-315.99	Developmental disabilities
V79.0-V79.9	Range of DD early childhood/DD- unspecified
314.01	Hyperkinesias with DD
740-759	Congenital anomalies
317.00	Mild mental retardation
318.00	Moderate mental retardation
318.10	Severe mental retardation
318.20	Profound mental retardation
319.00	Mental retardation, severity unspecified

The DMH/DD/SAS Mental Health, Developmental Disabilities and Substance Abuse Related Admissions in Community Emergency Departments, Quarterly Report is published four times a year.

All reports are available on the Division's website:

<http://www.ncdhhs.gov/mhddsas/statpublications/reports/>

Questions and feedback should be directed to:

NC DMH/DD/SAS Quality Management Team

ContactDMHQuality@dhhs.nc.gov

Or

(919) 733-0696